Support for low carbon agriculture - able to adapt to observed climate change in the perspective of 2030 and 2050

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The main objective of the project is to improve resources use efficiency by implementing innovative low carbon farming practices and promotion sustainable use of mineral fertilizers in Poland.
WP6
Certification of GA-ZAP fertilisers use with recommended management practices (10 management practices)

WP1
Production level fertiliser LCA assessment

WP2
Farm level LCA survey (250 farms)

WP3
GHG Measurement (4 experiments) and modelling (4 tools)

WP4
Fertiliser use LCA assessment (JRC Carbon Calculator, 4R Nutrient Stewardship ....)

WP5
Tests of mitigation measures (8 experimental farms)

WP7
Coordination, networking knowledge sharing

Field-farm-region-country 2000-2030-2050 climate
LCagri
low-carbon farming practices

• (LC1) Assessment tools within 4R Nutrient Stewardship scheme.
• (LC2) Use of IUNG DSS computer tools for N optimisations (Nitrogen balance on the farm)
• (LC3) Tailor N application according to actual crop needs.
• (LC4) Promotion of in-depth incorporated fertilizer placement method
• (LC5) Abandoning autumn N dose..
• (LC6) Crop diversification with special focus on introduction of leguminous plants on arable land.
• (LC7) Implementation of cover crops.
• (LC8) Conservation agriculture practices. Strip seeding tillage system will be introduced and cultivation with seeder for the direct seeding.
• (LC9) Precision agriculture methods.
• (LC10) Reduced N fertilisers use on protected areas.
LCAgri participatory approach

Methods:
- Workshops with farmers and advisors (September 2015 – 120 participants attended)
- Regional conferences with discussion panels
- Internet forum

Problems

Solutions

- The Ministry of Agriculture (CAP, ...)
- Scientists (different disciplines)
- Extension services

Farmers

- GHG Inventory National Unit (new methods for assessment)
- Fertilizers supplier (GA-ZAP Puławy)

Consumers

- NGO

Agricultural organizations

Methods:
- Workshops with farmers and advisors (September 2015 – 120 participants attended)
- Regional conferences with discussion panels
- Internet forum
Existental agricultural practices will be evaluated under present climatic conditions and using climatic scenarios for 2030 and 2050 time horizons

The tools used:
- Calculator V2-26 Solagro
- Agro-C
- DNDC
- C-Tool

WP2 – modeling
WP4 – climate scenarios
WP7 – Stakeholders involvement
Farms survey:
Carbon footprint of current farming practices
CC adaption potentials of three groups of farms in Poland

Number of farms: 250

Farms groups:
- Plant production
- Plant production + dairy farming
- Plant production + pigs keeping

Number of regions in Poland: 16

Size of farms in the groups and regions:
(small- 1, medium – 2 or 3, large - 2 )
The survey structure:

A. General information on farms
   - Farms size, leguminous crops share in plant production, cover crops share, grasslands share, cattle, pigs number etc.

Crops in rotation (1-6)
B. Soil properties and production capacity
C. Fuel use and workhours
D. Mineral fertilizers use
F. Organic fertilizers use
G. Plant protection
H. Irrigation
Main assumptions

- Two years of data collection: 2016, 2017
- Strong collaboration with farmers and advisors (survey makers)
- Surveys performed by skilled advisors within FADN system link to economic analysis
- There is a space to include XC6 MACSUR 2 tools and recommendations in the planned work including surveys